

In the Claims:

Please cancel claim 1 and add new claims 25-39 as indicated in the following list of claims.

1-24. (Cancelled)

25. (New) An apparatus for supplying current to a device under test (DUT), the apparatus comprising:

a primary power supply input terminal for receiving a first current;

a power output terminal for connection to the DUT;

a trace for connecting the primary power supply input terminal to the power output terminal;

an auxiliary power supply input terminal for receiving a second current;

an isolation capacitor connected to the trace;

an inductive sensor connected to sense current flow to the power output terminal;

and

an amplifier for providing current to the power output terminal, the amplifier connected to the auxiliary power supply to supply power to the power output terminal as controlled by an input received from the inductive sensor.

26. (New) The apparatus of claim 25, wherein the auxiliary power supply is controlled to supplement the first current following at least one edge of a clock signal driving the DUT.

27. (New) The apparatus of claim 25, wherein
- the isolation capacitor is connected from the trace to ground; and
- the inductive sensor comprises a coupler connected to measure current flowing through the isolation capacitor.
28. (New) The apparatus of claim 25, wherein
- the isolation capacitor is connected from the trace to ground; and
- the inductive sensor comprises a coupler connected to measure current flowing through the trace.
29. (New) The apparatus of claim 25, further comprising a probe card supporting the power supply input terminal, the power output terminal, the trace, the auxiliary power supply input terminal, the isolation capacitor, the inductive sensor, and the amplifier.
30. (New) The apparatus of claim 29, wherein the power supply output terminal comprises a spring probe contact on the probe card for connecting to a pad on the DUT.
31. (New) A DUT tested by an apparatus as claimed in claim 30.
32. (New) An apparatus for supplying current to a device under test (DUT), the apparatus comprising:
- a primary power supply input terminal for receiving a first current;

a power output terminal for connection to the DUT;

a resistor having a first terminal connected to the power supply input terminal and a second terminal connected to the power output terminal;

an auxiliary power supply input terminal for receiving a second current;

a current pulse generation circuit having an output connected to the power output terminal, the current pulse generating circuit having power supplied from the auxiliary power supply input terminal, and a control input terminal; and

a feedback circuit having an input connected to the current pulse generation circuit to control the magnitude of current supplied at the output of the current pulse generation circuit, the feedback circuit having an input connected to the power output terminal.

33. (New) The apparatus of claim 32, wherein the control input terminal is connected to a test control device that causes a pulse to be provided from the current pulse generation circuit following at least one edge of a clock signal driving the DUT.

34. (New) The apparatus of claim 32, wherein the feedback circuit comprises an integrator.

35. (New) The apparatus of claim 32, wherein the feedback circuit comprises:

a switch having a switching control terminal forming the control input terminal, a common terminal, a first switching terminal connected to ground and a second switching terminal connected to a power control terminal;

an amplifier having an output connected to the power output terminal, an input connected to the common terminal of the switch, and a power supply input connected to the auxiliary power supply terminal.

36. (New) The apparatus of claim 35, wherein the power control terminal of the switch is connected to a digital to analog converter.

37. (New) The apparatus of claim 32, further comprising a probe card supporting the power supply input terminal, the power output terminal, the resistor, the auxiliary power supply input terminal, the current pulse generation circuit, and the feedback circuit.

38. (New) The apparatus of claim 37, wherein the power supply input terminal comprises a spring probe contact on the probe card for connecting to a pad on the DUT.

39. (New) An apparatus for supplying current to a semiconductor device under test (DUT), the apparatus comprising:

a power supply input terminal for receiving a power supply signal; and

a means for adjusting the magnitude of a signal received at a power supply input terminal to provide at a power supply output terminal in response to a voltage appearing at the power supply output terminal, said power supply output terminal being provided for connection to the DUT,

wherein the magnitude is set proportional to a predicted amount by which the semiconductor device will increase its demand for current at the power supply output terminal following a clock edge of a signal received by the DUT.